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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,997	10/14/2003	John L. Melanson	1381-CA	4763

20284 7590 05/21/2004

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EXAMINER	
YOUNG, BRIAN K	
ART UNIT	**PAPER NUMBER**
2819	

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/684,997	MELANSON, JOHN L.
	Examiner	Art Unit
	Brian Young	2819

-- Th MAILING DATE of this communication app ars on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☒ Claim(s) *1-13* is/are allowed.
6)☒ Claim(s) *14-17* is/are rejected.
7)☒ Claim(s) *18* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Glasser et al.

3. Claims 14 and 15 recite " (14) A three-way element for a digital device, comprising: an element having at least three states and wherein the at least three states include at least a low state, a middle state, and a high state. (15)The three-way element for a digital device according to Claim 14, wherein the middle state is utilized as an initial state by a successive-approximation-register (SAR) algorithm and the SAR algorithm determines whether the three-way element is to be switched from the middle state to either the low state or the high state."

4. Glasser et al discloses a successive approximation circuit 116 which receives the multiplexed output from the main multiplexor U11 through the resistor R41. The successive approximation circuit 116 enables the

microprocessor U40 to determine the voltage level of a signal output from the multiplexor U11. In this regard, the output from the main multiplexor U11 provides one input to a comparator (LM339) U3. The other input to the comparator U3 is provided by a digital to analog converter "DAC" circuit (DAC708KH) U1, shown in FIG. 6K as a continuation of the successive approximation circuit 116. Specifically, the successive approximation circuit permits the microprocessor U40 to receive a plurality of both digital and analog input signals through a single input line "RXDATA". This is achieved through the toggling of the comparator U3 output in response to a changing "VOUT" signal level from the DAC circuit U1. The microprocessor U40 transmits a series of different digital voltage levels to the DAC circuit U1 via the RP bus until such time as the comparator U3 changes output states. In this regard, the microprocessor U40 preferably performs a binary search by starting with a digital voltage level in the middle of the acceptable range, determining if this value is high or low, and then stepping up or down from that point. The microprocessor U40 then determines the voltage level output from the main multiplexor U11 through its knowledge of the last digital voltage level transmitted to the DAC circuit U1. Accordingly, it should be appreciated that the combination of this successive approximation procedure and the use of multiplexors substantially reduces the number of input pins that would otherwise be required to read all of the digital and analog inputs signals being gathered by the field computer unit 12.

5. Claims 1-13 are allowed.

6. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Young whose telephone number is 571-272-1816. The examiner can normally be reached on Mon-Fri 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Young
Primary Examiner
Art Unit 2819

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